

**Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. - 14. (Cancelled)

15. (Previously Presented) A system for embedding additional information in MPEG video data, said system comprising:

means for detecting a video frame in the video data from a video data stream,  
wherein said video frame is an intra-macroblock of an I-frame or of a P or B-frame;

means for extracting data for a small domain from said detected video frame and  
for buffering said data;

means for embedding part or all of the additional information into said buffered  
small domain data without changing the length of the video data stream based on a  
determination whether the embedding of all the additional information will change the  
length of the video data stream and where the embedding of all the additional information  
is determined to change the length of the video data stream, embedding  $\frac{1}{2}$  of the  
additional data if the embedding of  $\frac{1}{2}$  does not change the length of the video data stream,  
wherein said means for embedding said additional information includes:

means for detecting a DC factor in said buffered small domain;

means for determining whether the bit length of said DC factor will be  
unchanged even when said additional information has been embedded;

means for embedding said additional information in said buffered small domain, when said bit length will be unchanged; and

means for determining whether  $\frac{1}{2}$  of said additional information can be embedded when said bit length will be changed, and for embedding said  $\frac{1}{2}$  of said additional information in said small domain when embedding is feasible; and

means for returning said small domain, in which said additional information has been embedded, to said video data.

16. **(Cancelled)** The system according to claim 15, wherein said video data is MPEG video data.

17. **(Cancelled)** The system according to claim 16, wherein said video frame is an intra-macroblock of an I-frame or of a P or B-frame.

18. **(Cancelled)** The system according to claim 17, wherein said means for embedding said additional information includes:

means for detecting a DC factor in said buffered small domain;

means for determining whether the bit length of said DC factor will be unchanged even when said additional information has been embedded; and

means for embedding said additional information in said buffered small domain, when said bit length will be unchanged.

19. **(Cancelled)** The system according to claim 18, wherein said means for embedding said additional information further includes:

means for determining whether  $\frac{1}{2}$  of said additional information can be embedded when said bit length will be changed, and for embedding said  $\frac{1}{2}$  of said additional information in said small domain when embedding is feasible.

20. **(Currently Amended)** The system according to claim ~~19~~ 20, wherein said additional information is an embedding pattern obtained using a pseudorandom number.

21. **(Original)** The system according to claim 20, wherein said small domain is one macroblock domain.

22. **(Cancelled)** A system for detecting additional information in video data, said system comprising:

means for detecting a video frame in video data;

means for extracting data for a small domain from said video frame that is detected, and for buffering some data; and

means for detecting additional information in said small domain that is buffered.

23. **(Cancelled)** A method for embedding additional information in video data, said method comprising the steps of:

detecting a video frame in video data from a video data stream;

extracting data for a small domain from said detected video frame and buffering  
said data;

embedding part or all of the additional data into said buffered small domain  
without changing the length of the video data stream based on a determination whether  
the embedding of all the additional information will change the length of the video data  
stream and where the embedding of all the additional information is determined to change  
the length of the video data stream, embedding  $\frac{1}{2}$  of the additional data if the embedding  
of  $\frac{1}{2}$  does not change the length of the video data stream; and

returning said small domain, in which said additional information has been  
embedded, to said video data.

24. **(Cancelled)** A method for embedding an electronic watermark in an MPEG  
stream, said method comprising the steps of:

detecting an intra-macroblock of an I-frame, or a P or B-frame, in an MPEG  
stream;

extracting data for one macroblock from said MPEG stream and buffering said  
data when said intra-macroblock of said I-frame, or said P or B-frame, is detected;

embedding an embedding pattern in said buffered macroblock without changing  
the length of VLC; and

returning said macroblock, in which said embedding pattern has been embedded,  
to said MPEG stream.

25. **(Cancelled)** A method for detecting additional information in video data, said method comprising the steps of:

detecting a video frame in video data;

extracting data for a small domain from said video frame that is detected, and buffering said data; and

detecting additional information in said small domain that is buffered.

26. **(Cancelled)** A method for detecting an electronic watermark in an MPEG stream, said method comprising the steps of:

detecting an intra-macroblock of an I-frame or a P or B-frame in an MPEG stream;

extracting data for one macroblock from said MPEG stream and buffering said data when said intra-macroblock of said I-frame or said P or B -frame is detected; and

detecting a pattern that is embedded in a DC factor in said macroblock that is buffered.

27. **(Cancelled)** A system for controlling the copying of digital data, said system comprising:

means for detecting CCI in input data;

means for, when said CCI is detected, detecting ECCI in said input data;

means for, when said ECCI is detected, inhibiting the copying of the digital data;

and

means for, when said ECCI is not detected permitting the embedding of said ECCI in said digital data and the copying of the resultant digital data.

28. **(Cancelled)** A storage medium on which a program for embedding additional information in video data, said program comprising:

a function for detecting a video frame in video data from a video data stream;

a function for extracting data for a small domain from said detected video frame

and for buffering said data;

a function for embedding part or all of the additional data into said buffered small domain without changing the length of the video data stream based on a determination whether the embedding of all the additional information will change the length of the video data stream and where the embedding of all the additional information is determined to change the length of the video data stream, embedding  $\frac{1}{2}$  of the additional data if the embedding of  $\frac{1}{2}$  does not change the length of the video data stream; and

a function for returning said small domain, in which said additional information has been embedded, to said video data.

29. **(Cancelled)** A storage medium for storing a program for detecting additional information in video data, said program comprising:

a function for detecting a video frame in video data;

a function for extracting data for a small domain from said video frame that is detected, and for buffering said data; and

a function for detecting additional information in said small domain that is buffered.

30. **(Currently Amended)** An apparatus for embedding additional information in MPEG video data comprising:

means for detecting a video frame in the video data from a video data stream, wherein said video frame is an intra-macroblock of an I-frame or a P or B-frame;

means for extracting data for a small domain from said detected video frame and for buffering said data;

means for embedding part or all of the additional information in said buffered small domain data without changing the length of the video data stream based on a determination whether the embedding of all the additional information will change the length of the video data stream and where the embedding of all the additional information is determined to change the length of the video data stream, embedding  $\frac{1}{2}$  of the additional data if the embedding of  $\frac{1}{2}$  does not change the length of the video data stream, wherein said means for embedding additional information includes:

means for detecting a DC factor in said buffered small domain;

means for determining whether the bit length of said DC factor will be unchanged even when said additional information has been embedded;

means for embedding said additional information in said buffered small domain, when said bit length will be unchanged; and

means for determining whether 1/2 of said additional information can be embedded when said bit length will be changed, and for embedding said 1/2 of said additional information in said small domain when embedding is feasible; and

means for returning said small domain, in which said additional information has been embedded, to said video data.

31. **(Cancelled)** The apparatus according to claim 30, wherein said video data is MPEG video data.

32. **(Cancelled)** The apparatus according to claim 31, wherein said video frame is an intra-macroblock of an I-frame or a P or B-frame.

33. **(Cancelled)** The apparatus according to claim 32, wherein said means for embedding additional information includes:

means for detecting a DC factor in said buffered small domain;

means for determining whether the bit length of said DC factor will be unchanged even when said additional information has been embedded; and

means for embedding said additional information in said buffered small domain, when said bit length will be unchanged.



34. **(Cancelled)** The apparatus according to claim 33, wherein said means for embedding said additional information further includes:

means for determining whether  $1/2$  of said additional information can be embedded when said bit length will be changed, and for embedding said  $1/2$  of said additional information in said small domain when embedding is feasible.

35. **(Currently Amended)** The apparatus according to claim ~~34~~ 30, wherein said additional information is an embedding pattern obtained using a pseudorandom number.

36. **(Original)** The apparatus according to claim 35, wherein said small domain is one macroblock domain.

37. **(Cancelled)** An apparatus for detecting additional information in video data, comprising:

means for detecting a video frame in video data;

means for extracting data for a small domain from said video frame that is detected, and for buffering some data; and

means for detecting additional information in said small domain that is buffered.

38. **(Currently Amended)** The system according to claim 15, wherein said MPEG video data is MPEG-2 video data.

39. **(Previously Presented)** The system according to claim 38, wherein said MPEG-2 video data is a packetized MPEG-2 video data stream.

40. **(Cancelled)** The method according to claim 23, wherein said video data is MPEG-2 video data.

41. **(Cancelled)** The storage medium on which a program embedding additional information in video data according to claim 28, wherein ~~said~~ the video data is MPEG-2 video data.

42. **(Currently Amended)** The apparatus for embedding additional information in video data according to claim 30, wherein said MPEG video data is MPEG-2 video data.